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Financial Ratio Analysis for Predicting Financial Distress with Metode Altman Z–Score in PKU Muhammadiyah Hospital Purbalingga

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ABSTRACT

Study This aiming For analyze condition finances of the PKU Muhammadiyah Hospital in Purbalingga use Altman Z-Score method for use predict potential the occurrence of financial distress. Analysis ratio finance covering various ratio , such as liquidity , profitability , and leverage, applied to the reporting data finance House Sick The Altman Z-Score method is used For give description about level health financial matters of PKU Muhammadiyah Hospital, Purbalingga , what is it? is at in condition safe , gray area , or at risk experience difficulty finance.From results research , the company experienced fluctuation big in condition his finances between 2019 and 2023. 2021 is the only one the period that shows condition real finance healthy and in a safe zone . The years 2019, 2022, and especially 2020 and 2023 show that company be in a condition that is not stable or even dangerous in a way financial.fluctuation This show existence problem in stability financial and management necessary finances overcome.

Keywords: Financial Ratio Analysis, Financial Distress, Altman Z-Score.

1. Introduction

PKU Muhammadiyah Hospital Purbalingga is one of House operating pain with mission social and religious , which requires management efficient finance For still operate with good and must still guard balance between objective social and sustainability financial . Management effective finance become key For guard continuity operational House sick.Evaluation to condition finance House Sick become important , especially For anticipate possibility the occurrence of financial distress, which can impact on services health and sustainability business . To become deep attention worry financial distress occurs when condition national and global economy in condition No Good like moment This the occurrence covid 19 pandemic in various countries.

Platt and Platt in Almilia and Kristijadi (2003) stated that that financial distress is defined as stage decline condition financial events that occur before bankruptcy or liquidation . According to Ali in Afriyeni (2012) when reviewed from condition finance There is Three (3) conditions that cause financial distress , namely factor absence sufficient capital (equity) or lack of capital

(equity), the amount amount of debt and amount flower as well as suffer loss . There is various method For do testing whether company experiencing financial distress, according to Platt and Platt, 2006 one of method For testing financial distress is use analysis ratio from information finance company . Research This Once conducted by Altman (1968) is study the beginning of the study utilization analysis ratio finance as tool For predict bankruptcy company.

2. Theoretical Framework

2.1 Analysis Report Finance

Analysis the ratio used For measuring financial distress is liquidity , return on assets, and leverage:
Ratio liquidity is ratio that describes ability company in fulfil obligation term short . According to Kamsir (2017) Ratio Current Ratio is ratio For measure ability company in pay obligation term short or immediate debt due at the time of billing in a way overall.
Return on Asset (ROA) is the ratio that describes ability management For to obtain profit or profit Profit obtained can used For various type needs , good For to finance operational company and also pay obligation obligation.According to Kasmir (2017) Return on Asset or return on investment is the ratio that shows return on amount assets used company.
Leverage is ratio For measure the magnitude use obligation or debt in to finance operation company, increasingly high leverage means the use of debt is increasing big in to finance operational company.

2.2 Financial Distress

Financial distress is stage decline condition financial matters that occur in the company before the occurrence bankruptcy or liquidation. A company can categorized currently experiencing financial distress or difficulty finance if company the show number negative on profit operations, profit clean and value book equity as well as company the conducting a merger (Brahmana, 2007). Another phenomenon of financial distress is company tend experience difficulty liquidity shown with ability companies that are increasingly decrease in fulfil his obligation to creditors (Hanifah & Purwanto, 2013) financial distress also occurs when company fail or No capable Again fulfil obligation debtor because experience deficiencies and inadequacies funds For operate or continue his efforts again. If keep going experience profit net profit negative during a number of year. Measurement financial distress can done with use a number of method that is Springate, Zmijewski, and one of the difficulty models the most famous finance is the Altman Z-score. The Altman Z-score method is indicator For measure potential bankruptcy (financial distress) of a company. Z-score was developed by Edward I Altman, Ph.D, a professor and economist finance from New York University's Stern School of Business in 1968.

2.3 Altman Z-Score

The Z-Score model is a prediction model bankruptcy discovered by Edward I. Altman in 1968. The Z-Score model uses Multiple 15 Discriminant Analysis method with five types ratio finance. The Z-score model is a model that pioneered the multi discriminant analysis model and has been used in a way wide throughout the world. According to (Mastuti S, 2003) the Z-Score method is determined score from count standard times ratios finances that will show level possibility bankruptcy company . According to (Hadi & Anggraeni, 2008), the Altman prediction model or Z-Score is predictor best between the three prediction models bankruptcy namely the Zmijewski model and the Springate model. This Z-Score model is basically aiming For look for Z value, value This is value that can be show condition finance a company, is it in condition Healthy or No healthy and able show performance company. Use of the altman model in measure the Z Value at each companies go public or non public, altman Keep going modify Altman's formula (1967, revised) first 1983), but which will We use is a revised formula final that is 1984.

Altman model modification (1984)

Along walking time Lots researchers who modify Altman z-score so that you can more productive moreover moment used in sector industry certain. In the last model This ratio sale to total assets removed with hope that can give effect industry. Besides remove ratio sale against total assets, the sample used replaced become company from developing countries with existence change in modified Z-Score formula make the Z”-Score more flexible Because can used For companies go public or company non public. The following formula mark altman modification;
$Z = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4$

Where;
X1 = (Assets current - current liabilities) / total assets
X2 = Retained earnings / total assets
X3 = Profit before interest and taxes / total assets
X4 = Book value equity / value book debt After a series of ratio finance calculation z-score method is carried out , then will produce numbers that have explanation or interpretation certain.

Variables or ratios finances used in analysis Altman model discriminant version modification four variable in (Agnes Sawir, 2000) namely;

- Net Working Capital to Total Assets (WCTA) shows ability company For generate working capital clean from the total assets owned. The ratio This counted with share working capital clean with total assets. Working capital clean obtained with method assets fluent reduced with smooth obligations.
- Retained Earnings to Total Assets (RETA) shows ability company For produce profit detained of total assets company. Profit detained is profit that is not shared to the holders shares. In other words, profit detained show How many Lots income companies that do not paid in form dividend to the holders share.
- Earnings Before Interest and Tax to Total Assets (EBITTA) shows ability company For produce profit from assets company, before payment interest and taxes.
- Book Value of Equity to Book Value of Liabilities describe ability company in know the amount of company capital used For bear burden debt in term long.

Interpretation of altman Model Z-Score Values

Z-score Values	Interpretation
Z > 2,6	The company has no problem with financial conditions (safe zone)
1,1 < Z < 2,6	The company's financial condition is not good,but will experience problem if it is not fixed immediately (grey zone)
Z < 1,1	The company is experiencing serious financial problem (danger zone)

3. Research Methodology

Study This is detailed research about studies case a object certain during period time certain with Enough deep and comprehensive including environment and its past conditions.Design study started from make calculation ratio finance , then made trend results ratio finance the in A table, next made analysis and interpretation.
Objects The research that will be tested in study This namely PKU Muhammadiyah Hospital Purbalingga, which located on Jalan Kolonel Sugiri The Gandular Bobotsari Purbalingga Central Java . Data used is quantitative data sourced from from report finances of the PKU Muhammadiyah Hospital in Purbalingga period 2019 - 2023. Variables used in study This is variable ratio finance (ratio liquidity namely current ratio; ratio profitability namely ratio profit retained and ratio leverage ; and ratio solvency). Method analysis used by researchers For processing data, namely with use Altman Z-Score method with the data conducted in study. This that is in the form of report data balance sheet and profit loss. The result of calculation of the data. Then analyzed with use ratios – ratios in the z – score model with Altman model formulation.

4. Results

Discussion in study This using financial data from the PKU Muhammadiyah Hospital in Purbalingga for 4 years from 2019 to by 2022. Analysis description use Developments and trends from results ratio finance analyzed in a way description. For predict the occurrence a financial distress condition. Table 1 shows summary of financial data taken from report finances of the PKU Muhammadiyah Hospital in Purbalingga from 2019 to by 2023.

Table 1. Summary of financial data of PKU Muhammadiyah Hospital, Purbalingga 2019 – 2023

Information	2019		2020		2021		2022		2023	
Curresnt Assets	Rp	2.720.397.958	Rp	1.232.053.568	Rp	13.793.820.777	Rp	4.377.906.349	Rp	4.597.501.379
Non - Current Assets	Rp	15.134.200.780	Rp	19.245.452.507	Rp	17.840.511.963	Rp	29.590.081.946	Rp	32.426.367.638
Total assets	**Rp**	**17.854.598.738**	**Rp**	**20.477.506.075**	**Rp**	**31.634.332.740**	**Rp**	**33.967.988.295**	**Rp**	**37.023.869.017**
Short Term Liabilities	Rp	476.004.459	Rp	113.835.548	Rp	2.616.822.918	Rp	4.206.587.514	Rp	7.265.425.371
Long Term Liabilities	Rp	13.466.137.536	Rp	16.249.884.998	Rp	13.244.102.792	Rp	11.835.255.572	Rp	13.718.391.642
Total Liabilities	**Rp**	**13.942.141.995**	**Rp**	**16.363.720.546**	**Rp**	**15.860.925.710**	**Rp**	**16.041.843.086**	**Rp**	**20.983.817.013**
Net Profit	Rp	190.475.283	Rp	201.328.786	Rp	952.830.445	Rp	2.152.738.179	Rp	2.200.871.960
Equity	Rp	3.912.456.743	Rp	4.113.785.529	Rp	15.773.407.030	Rp	17.926.145.209	Rp	16.040.052.004
EBIT	Rp	229.119.880	Rp	245.882.181	Rp	1.233.783.083	Rp	2.700.459.103	Rp	2.212.016.660

4.1 Networking Capital to Total Assets (X 1)

Ratio This show ability company For generate working capital clean from the total assets owned. The ratio This counted with share working capital clean with total assets. Working capital clean obtained with method assets fluent reduced with obligation smooth. Here is table looking for Working Capital (Net Working Capital) of PKU Muhammadiyah Hospital Purbalingga 2019-2023 .

Table 2. Net Working Capital Table (Capital) Work) Period 2019-2023

YEAR	CURRENT ASSETS		CURRENT DEBT		NET WORKING CAPITAL	
2019	Rp	2.720.397.958	Rp	476.004.459	Rp	2.244.393.499
2020	Rp	1.232.053.568	Rp	113.835.548	Rp	1.118.218.020
2021	Rp	13.793.820.777	Rp	2.616.822.918	Rp	11.176.997.859
2022	Rp	4.377.906.349	Rp	4.206.587.514	Rp	171.318.835
2023	Rp	4.597.501.379	Rp	7.265.425.371	-Rp	2.667.923.992

Based on table above, year **2019**, Net Working Capital (NWC) of Rp. 2,244,393,499 shows position sufficient liquidity strong, where assets fluent Far more big than debt smooth. **In 2020,** NWC decreased, this This indicates decline ability company For fulfil obligation term in short compared to year previously, although Still be in position positive,year **2021** NWC increases sharp. Increase This show company own position excellent liquidity, with asset fluent Far exceed obligation smooth , which can to signify improvement significant in asset fluent or decline obligation smooth.2021 is indicated Because the existence of the Covid-19 pandemic , and the high income in 2021 due to the PKU Muhammadiyah Purbalingga Hospital nurse Covid 19 patients.Next year **2022** NWC down sharp , thing This Can caused by an increase debt fluent or decline asset lancer,year **2023** NWC changes become negative, condition This show that debt fluent exceed asset smooth , which means company is at in position risky liquidity , with possibility difficulty fulfil obligation term in short.In overall , trend This show that company experience significant fluctuations in its liquidity. In particular, conditions in 2023 indicate the need attention Serious to working capital management, because NWC is negative Can to signify risk inability fulfil obligation term short.

Table 3. Net Working capital to Asset (X1) 2019-2023 period

YEAR	NET WORKING CAPITAL		TOTAL ASSETS		NET WORKING /TOTAL ASSET (X1)
2019	Rp	2.244.393.499	Rp	17.854.598.738	0,1257
2020	Rp	1.118.218.020	Rp	20.477.506.075	0,0546
2021	Rp	11.176.997.859	Rp	31.634.332.740	0,3533
2022	Rp	171.318.835	Rp	33.967.988.295	0,0050
2023	-Rp	2.667.923.992	Rp	37.023.869.017	-0,0721

Year **2019** The ratio of "Net Working Capital/Total Assets " is 0.1257 or 12.57%. This show that approximately 12.57% of total assets company funded by working capital clean, which indicates position sufficient liquidity good. Working capital positive clean This show ability company For pay obligation term short and steady own asset significant smooth. **2020**: Ratio down to 0.0546 or 5.46%. The decrease This indicates that working capital contribution clean to total assets decreased, indicating position more liquidity weak compared to year previously. Although Still positive, number This to signify company become less liquid. **2021**: Ratio increase in a way significant to 0.3533 or 35.33%. The increase This show improvement liquidity company, where working capital clean contribute Enough big to total assets . This is to signify improvement ability company in fulfil obligation short term. **2022**: Ratio return down sharp to 0.0050 or 0.5%. This to signify decline liquidity company in a way drastic compared to with year previously. Working capital clean only covers part small of total assets, which shows condition very tight liquidity. **2023**: Ratio become negative, which is -0.0721 or -7.21%. This show that working capital clean negative and total liabilities fluent exceed asset smooth. Ratio negative This to signify that company face difficulty serious liquidity, because obligation term short No Again can filled fully with asset smoothly owned.

4.2 Retained Earnings to Total Assets (X 2)

Following is table Retained earnings to Total Assets (X 2) period 2019-2023 .

Table 4. Retained earnings to Total Assets (X 2) Period 2019 – 2023

YEAR	RETAINED EARNING		TOTAL ASSSETS		RETAINED EARNING /TOTAL ASSETS (X2)
2019	Rp	190.475.283	Rp	17.854.598.738	0,0107
2020	Rp	201.328.786	Rp	20.477.506.075	0,0098
2021	Rp	952.830.445	Rp	31.634.332.740	0,0301
2022	Rp	2.152.738.179	Rp	33.967.988.295	0,0634
2023	Rp	2.200.871.960	Rp	37.023.869.017	0,0594

Year **2019** " Profit " Ratio Held /Total Assets " of 0.0107 or around 1.07%. This show that retained earnings only covers part small of total assets company, which can means profit generated Still Enough low compared to with assets owned. **2020**: Ratio down to 0.0098 or around 0.98%. Decrease This show efficiency profit to asset A little weaken compared to year previously. In other words, profit detained relatively to assets decreased. **2021**: Ratio increase to be 0.0301 or 3.01%. This show repair in retained profitability to total assets, which means more Lots from asset company supported by the profits that have been generated and retained. **2022**: Ratio increase more carry on to 0.0634 or 6.34%. The increase significant This indicates that company the more capable maintain more Lots profit along with increase its assets, which are indicator positive For internal growth. **2023**: Ratio A little decrease to 0.0594 or 5.94%. The decrease this, although small, can show A little decline efficiency in guard profit detained compared to total assets.

4.3 Earnings Before Interest to Total Assets (X 3)

The result of the X3 calculation can be seen in the table following This.

Table 5. EBITTA (X 3) for the period 2019 – 2023

YEAR	EBIT		TOTAL ASSETS		EBIT/TOTAL ASSETS (X3)
2019	Rp	229.119.880	Rp	17.854.598.738	0,0128
2020	Rp	245.882.181	Rp	20.477.506.075	0,0120
2021	Rp	1.233.783.083	Rp	31.634.332.740	0,0390
2022	Rp	2.700.459.103	Rp	33.967.988.295	0,0795
2023	Rp	2.212.016.660	Rp	37.023.869.017	0,0597

Year **2019**, The ratio of "EBIT/Total Assets " is 0.0128 or 1.28%. This show that level return company assets (ROA) relatively low, which means company only produce profit operation amounting to 1.28% of its total assets. This is to signify efficiency use asset Still less than optimal. **2020**: Ratio down to 0.0120 or 1.20%. The decrease This show that efficiency in generate relative EBIT to total assets decrease A little compared to year previously, indicating decline profitability or improvement assets that are not balanced with growth operating profit. **2021**: Ratio increase significant to 0.0390 or 3.90%. This show repair substantial in efficiency operational company, where the company capable produce profit more operations big of its total assets. Increase This reflect utilization more assets good and increased productivity. **2022**: Ratio increase more carry on to 0.0795 or 7.95%. The increase This show ability company in utilise his assets For produce profit operation in a way more effective compared to year previously. This is positive indication about improvement performance company operations. **2023**: Ratio A little decrease to 0.0597 or 5.97%. The decrease This to signify efficiency in produce profit from asset experience decline compared to with 2022. Although There is decline, level return Still more tall compared to 2019-2020, which shows sufficient performance Good in a way overall.

4.4 Book Value of Equity to Book Value of Total Debt (X 4)

The result of the calculation of X 4 can be seen in the table following This.

Table 6. Book Value of Equity to Book Value of Total Debt (X 4) Period 2019 – 2023

YEAR	EQUITY		TOTAL LIABILITIES		EQUITY/TOTAL LIABILITIES (X4)
2019	Rp	3.912.456.743	Rp	13.942.141.995	0,2806
2020	Rp	4.113.785.529	Rp	16.363.720.546	0,2514
2021	Rp	15.773.407.030	Rp	15.860.925.710	0,9945
2022	Rp	17.926.145.209	Rp	16.041.843.086	1,1175
2023	Rp	16.040.052.004	Rp	20.983.817.013	0,7644

Year **2019**: The ratio of " Equity /Total Debt" is 0.2806 or 28.06%. This show that equity company only covers around 28% of its total debt . This is indicates high level of leverage, where the company more Lots funded by debt rather than own capital , which can be increase risk finance If No managed well . **2020**: Ratio decrease to 0.2514 or 25.14%. The decrease This show that proportion equity to total debt is increasing small, which means company the more depend on debt for to fund its assets. This Can increase risk financial, especially If ethnic group flower increase or If company face challenge in generate revenue. **2021**: Ratio increase significant to be 0.9945 or 99.45%. This show improvement substantial in equity company compared to its total debt, which is almost approach value 1. Condition This to signify that company has do effort big For strengthen structure its capital and reduce dependence against debt, which can reduce financial risk. **2022**: Ratio increase more carry on to 1.1175 or 111.75%. In the year of this, equity company exceeds its total debt. This show more capital structure Healthy with more leverage low, which means company more stable from corner view risk finance and have ability more big For withhold economic fluctuations. **2023**: Ratio decrease to be 0.7644 or 76.44%. Although ratio This more low compared to 2022, equity company Still more tall compared to its total debt, although with a larger margin small.

Calculation Results Altman Z-Score Method

After the results calculation from all ratio Altman z–score at PKU Muhammadiyah Hospital Purbalingga, then every results from each year will entered in formulation Altman and multiplied with weight of each ratio Altman z-score. The results of calculation adjustment formulation Altman can seen in the table following.

Table 7. Calculation Results Altman Z-Score Formulation for the 2019 – 2023 Period

YEAR	6,56 X1	3,26 X2	6,72 X3	1,05 X4	Altman Z- Score
2019	0,82462	0,0348	0,0862	0,2947	1,2403
2020	0,35822	0,0321	0,0807	0,2640	0,7349
2021	2,31777	0,0982	0,2621	1,0442	3,7223
2022	0,03309	0,2066	0,5342	1,1733	1,9473
2023	-0,47271	0,1938	0,4015	0,8026	0,9252

Table 8. Interpretation of Z Value Prediction of
PKU Muhammadiyah Hospital Purbalingga period 2019 - 2023

YEAR	ALTMAN Z-SCORE	Z VALUES	INFORMATION
2019	1,24	1,1<Z<2,6	The company's financial condition is not good (grey zone)
2020	0,73	Z<1,1	The company is in serious financial trouble (danger zone)
2021	3,72	Z>2,6	The company has no financial problem (safe zone)
2022	1,95	1,1<Z<2,6	The company's financial condition is not good (grey zone)
2023	0,93	Z<1,1	The company is in serious financial trouble (danger zone)

5. Conclusion

The company experienced fluctuation big in condition his finances between 2019 and 2023. 2021 is the only one the period that shows condition real finance healthy and in a safe zone, because in the year this,take care covid 19 patients . The years 2019, 2022, and especially 2020 and 2023 show that company be in a condition that is not stable or even dangerous in a way financial.fluctuation This show existence problem in stability financial and management necessary finances overcome. In overall, company need implement more strategies stable For guard condition finances in the safe zone and reduce risk bankruptcy in the future.

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